

#8

SEQUENCE LISTING



<110> FANG, FANG  
KOHLSTAEDT, LORI  
RENO, JOHN

<120> HUMANIZED ANTIBODIES

<130> 014357/027 8772

<140> 09/910,483

<141> 2001-07-19

<160> 96

<170> PatentIn Ver. 2.1

<210> 1

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain  
peptide of Hum A

<400> 1

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val  
50 55 60

Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr  
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Thr Asp Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
100 105 110

Thr Val Ser Ser  
115

<210> 2

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum A

<400> 2

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gaagttcaac ttgttgagtc tgggtggcggc ctggttcagc cgggtggctc tctgcgcctg 60
tcttgccgag caagcgggtt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggtaagg gtctggagtg ggtggcacgt atcgaccggg caaacgacaa caccatttac 180
gctgacagcg tgaagggccg ttttactatt tctagcgacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac ggactctggc 300
tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

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<210> 3

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum A

<400> 3

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1             5             10             15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
      20             25             30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
      35             40             45

Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
      50             55             60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
      65             70             75             80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
      85             90             95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
      100             105

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<210> 4

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum A

<400> 4

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gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtgttggtga tcgagttacc 60
attacttgcc gcgccagcca atctatcagt aataatcttc actggtatca acaaaaaccg 120
ggtaaagctc cgaaaacttct tatctatcac gcctctcaga gcattagcgg cgttccgagc 180

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cgcttctctg gctctggctc gggcacggac tttaccctta ccatacagctc tcttcagccg 240  
 gaagactttg ccacctatta ttgtcagcag tctaatagct ggccgtatac cttcgggtcaa 300  
 ggtaccaagg tcgagattaa gcgc 324

<210> 5  
 <211> 116  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VH Domain  
 peptide of Hum B

<400> 5  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
 20 25 30  
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Thr Ala Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 100 105 110  
 Thr Val Ser Ser  
 115

<210> 6  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VH nucleotide  
 sequence of Hum B

<400> 6  
 gaagttcaac ttgttgagtc tggtggcggt ctggttcagc cgggtggctc tctgcgcctg 60  
 tcttgccgag caagcggttt caacattaag gacacctaca tccattgggt gaggcaagct 120  
 ccgggtaagg gtctggagtg ggtggcacgt atcgaccggg caaacgacaa caccatttac 180  
 gctgacagcg tgaagggccg ttttactatt tctagcgacg actctaagaa caccgcgtac 240  
 cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac ggctctggc 300  
 tactgggttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

<210> 7  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VL Domain  
 peptide of Hum B

<400> 7  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn  
 20 25 30  
 Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg  
 100 105

<210> 8  
 <211> 324  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VL nucleotide  
 sequence of Hum B

<400> 8  
 gatatccaga tgaccaatc tccgtctagc ctgagcgcca gtggttggtga tcgagttacc 60  
 attacttgcc gcgccagcca atctatcagt aataatcttc actgggtatca acaaaaaccg 120  
 ggtaaagctc cgaaacttct tatctatcac gcctctcaga gcattagcgg cgttccgagc 180  
 cgcttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240  
 gaagactttg ccacctatta ttgtcagcag tctaatagct ggccgtatac cttcgggtcaa 300  
 ggtaccaagg tcgagattaa gcgc 324

<210> 9  
 <211> 116  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VH Domain  
 peptide of Hum C

&lt;400&gt; 9

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
 20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val  
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Gly Asp Asp Ser Lys Asn Thr Ala Tyr  
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 100 105 110

Thr Val Ser Ser  
 115

&lt;210&gt; 10

&lt;211&gt; 348

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic VH nucleotide  
 sequence of Hum C

&lt;400&gt; 10

gaagttcaac ttgttgagtc tggtggcggt ctggttcagc cgggtggctc tctgcgcctg 60  
 tcttgccgag caagcgggtt caacattaag gacacctaca tccattgggt gaggcaagct 120  
 ccgggtaagg gtctggagtg ggtggcacgt atcgaccggg caaacgacaa caccatttac 180  
 gctgacagcg tgaagggccg ttttactatt tctggcgacg actctaagaa caccgcgtac 240  
 cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac gacctctggc 300  
 tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

&lt;210&gt; 11

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic VL Domain  
 peptide of Hum C

&lt;400&gt; 11

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn  
                   20                  25                  30  
 Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
                   35                  40                  45  
 Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly  
                   50                  55                  60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
                   65                  70                  75                  80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr  
                   85                  90                  95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg  
                   100                  105

<210> 12

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum C

<400> 12

gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtggttggtga tcgagttacc 60  
 attacttgcc gcgccagcca atctatcagt aataatcttc actggatatca acaaaaaccg 120  
 ggtaaagctc cgaaacttct tatctatcac gcctctcaga gcattagcgg cgttccgagc 180  
 cgcttctctg gctctggctc gggcacggac tttaccctta ccatacagctc tcttcagccg 240  
 gaagactttg ccacctatta ttgtcagcag tctaatagct ggccgtatac cttcgggtcaa 300  
 ggtaccaagg tcgagattaa gcgc 324

<210> 13

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum D

<400> 13

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
   1                  5                  10                  15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
                   20                  25                  30  
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
                   35                  40                  45  
 Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val  
                   50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr  
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
100 105 110

Thr Val Ser Ser  
115

<210> 14

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide  
sequence of Hum D

<400> 14

gaagttcaac ttgttgagtc tgggtggcggc ctggttcagc cgggtgggctc tctgcgcctg 60  
tcttgccag caagcgggtt caacattaag gacacctaca tccattgggt gaggcaagct 120  
ccgggtaagg gtctggagtg ggtggcacgt atcgaccgg caaacgacaa caccatttac 180  
gctgacagcg tgaagggccg ttttactatt tctagcgacg actctaagaa caccgcgtac 240  
cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac gacctctggc 300  
tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

<210> 15

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL Domain  
peptide of Hum C

<400> 15

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn  
20 25 30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
35 40 45

Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
65 70 75 80

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg  
100 105

<210> 16

 $\langle 211 \rangle$  324

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum D

<400> 16

gatatccaga	tgacccaatc	tccgtctagc	ctgagcgcca	gtgttggtga	tcgagttacc	60
attacttgcc	gcgccagcca	atctatcagt	aataatcttc	actgggtatca	acaaaaaccg	120
ggtaaagctc	cgaaacttct	tatctatcac	gcctctcaga	gcattagcgg	cgttccgagc	180
cgcttctctg	gctctggctc	gggcacggac	tttaccctta	ccatcagctc	tcttcagccg	240
gaagactttg	ccacctatta	ttgtcagcag	tctaatagct	ggcgtatac	cttcggtcaa	300
qqtaccaaqq	tcqaqattaa	qcgc				324

<210> 17

<211> 116

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Description of Artificial Sequence: Synthetic VH Domain  
peptide of Hum E

<400> 17

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val  
50 55 60

Gln Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr  
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
100 105 110

Thr Val Ser Ser  
115



<210> 18  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VH nucleotide  
 sequence of Hum E

<400> 18  
 gaagttcaac ttgttgagtc tggtagcggt ctggttcagc cgggtgggctc tctgcgcctg 60  
 tcttgccgag caagcgggtt caacattaag gacacctaca tccattgggt gaggcaagct 120  
 ccgggtaagg gtctggagtg ggtggcacgt atcgaccgga caaacgacaa caccatttac 180  
 gatccgaagg tgcagggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240  
 cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac gacctctggc 300  
 tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

<210> 19  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VL Domain  
 peptide of Hum E

<400> 19  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn  
 20 25 30  
 Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg  
 100 105

<210> 20  
 <211> 324  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum E

<400> 20

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gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtgttggtga tcgagttacc 60
attacttgcc gcgccagcca atctatcagt aataatcttc actggatatca acaaaaaccg 120
ggtaaagctc cgaaacttct tatctatcac gcctctcaga gcattagcgg cgttccgagc 180
cgcttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagactttg ccacctatta ttgtcagcag tctaatagct ggccgtatac cttcgggtcaa 300
ggtaccaagg tcgagattaa gcgc                                     324

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<210> 21

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum F

<400> 21

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1              5              10              15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
      20              25              30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35              40              45

Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
 50              55              60

Lys Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr
 65              70              75              80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
      85              90              95

Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
 100              105              110

Thr Val Ser Ser
      115

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<210> 22

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum F

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<400> 22
gaagttcaac ttgttgagtc tgggtggcggg ctggttcagc cgggtgggctc tctgcgcctg 60
tcttgccgag caagcgggtt caacattaag gacacctaca tccattgggt gaggcaagct 120
ccgggtaagg gtctggagtg ggtggcacgt atcgaccggg caaacgacaa caccatttac 180
gctgacagcg tgaagggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240
cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac gacctctggc 300
tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

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<210> 23
<211> 108
<212> PRT
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Synthetic VL Domain
        peptide of Hum F

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<400> 23
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1             5             10             15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
          20             25             30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
          35             40             45
Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
          50             55             60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
          65             70             75             80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
          85             90             95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
          100             105

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<210> 24
<211> 324
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Synthetic VL nucleotide
        sequence of Hum F

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<400> 24
gatatccaga tgacccaatc tccgtctagc ctgagcgcca gtggttggtga tcgagttacc 60
attacttgcc gcgccagcca atctatcagt aataatcttc actggtatca acaaaaaccg 120
ggtaaagctc cgaaacttct tatctatcac gcctctcaga gcattagcgg cgttccgagc 180
cgcttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240
gaagactttg ccacctatta ttgtcagcag tctaatagct ggccgtatac cttcgggtcaa 300
ggtaccaagg tcgagattaa gcgc 324

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<210> 25  
 <211> 116  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VH Domain  
 peptide of Hum G

<400> 25  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
 20 25 30  
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val  
 50 55 60  
 Lys Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr  
 65 70 75 80  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 100 105 110  
 Thr Val Ser Ser  
 115

<210> 26  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic VH nucleotide  
 sequence of Hum G

<400> 26  
 gaagttcaac ttgttgagtc tggtggcggt ctggttcagc cgggtggctc tctgcgcctg 60  
 tcttgccgag caagcggttt caacattaag gacacctaca tccattgggt gaggcaagct 120  
 ccgggtaagg gtctggagtg ggtggcacgt atcgaccgga caaacgacaa caccatttac 180  
 gctgacagcg tgaagggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240  
 cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac gacctctggc 300  
 tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

<210> 27  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic VL Domain  
peptide of Hum G

&lt;400&gt; 27

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly
1				5				10						15	

Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser	Asn	Asn
		20					25						30		

Leu	His	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile
	35					40						45			

Lys	His	Ala	Ser	Gln	Ser	Ile	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
	50					55				60					

Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro
65					70					75					80

Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Asn	Ser	Trp	Pro	Tyr
				85					90					95	

Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys	Arg
		100						105			

&lt;210&gt; 28

&lt;211&gt; 324

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic VL nucleotide  
sequence of Hum G

&lt;400&gt; 28

gatatccaga	tgacccaatc	tccgtctagc	ctgagcgcca	gtgttggtga	tcgagttacc	60
attacttgcc	gcgccagcca	atctatcagt	aataatcttc	actggatatca	acaaaaaccg	120
ggtaaagctc	cgaaacttct	tatcaaacac	gcctctcaga	gcattagcgg	cgttccgagc	180
cgcttctctg	gctctggctc	gggcacggac	tttaccctta	ccatcagctc	tcttcagccg	240
gaagactttg	ccacctatta	ttgtcagcag	tctaatagct	ggccgtatac	cttcggtcaa	300
ggtaccaagg	tcgagattaa	gcgc				324

&lt;210&gt; 29

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic VH Domain  
peptide of Hum H

&lt;400&gt; 29

Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
1				5				10						15	

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
                   20                  25                  30  
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
                   35                  40                  45  
 Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val  
                   50                  55                  60  
 Gln Gly Arg Phe Thr Ile Ser Ala Asp Asp Ser Lys Asn Thr Ala Tyr  
                   65                  70                  75                  80  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
                   85                  90                  95  
 Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
                   100                  105                  110  
 Thr Val Ser Ser  
                   115

<210> 30

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH nucleotide sequence of Hum H

<400> 30

gaagttcaac ttgttgagtc tgggtggcggc ctggttcagc cgggtggctc tctgcgcctg 60  
 tcttgccgag caagcgggtt caacattaag gacacctaca tccattgggt gaggcaagct 120  
 ccgggtaagg gtctggagtg ggtggcacgt atcgaccggg caaacgacaa caccatttac 180  
 gatccgaagg tgcagggccg ttttactatt tctgcggacg actctaagaa caccgcgtac 240  
 cttcagatga actctctgcg tgccgaggac accgccgtct actactgcac gacctctggc 300  
 tactgggttg cctactgggg ccagggcacg cttgtcaccg tctcttct 348

<210> 31

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL Domain peptide of Hum H

<400> 31

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
           1                  5                  10                  15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn  
                   20                  25                  30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
           35                                  40                                  45  
 Lys His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly  
           50                                  55                                  60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
           65                                  70                                  75                                  80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr  
                                   85                                  90                                  95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg  
                                   100                                  105

<210> 32

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VL nucleotide sequence of Hum H

<400> 32

gatataccaga tgacccaatc tccgtctagc ctgagcgcca gtggttggtga tcgagttacc 60  
 attacttgcc gcgccagcca atctatcagt aataatcttc actggtatca acaaaaaccg 120  
 ggtaaagctc cgaaacttct tatcaaacac gcctctcaga gcattagcgg cgttccgagc 180  
 cgcttctctg gctctggctc gggcacggac tttaccctta ccatcagctc tcttcagccg 240  
 gaagactttg ccacctatta ttgtcagcag tctaatagct ggccgtatac cttcgggtcaa 300  
 ggtaccaagg tcgagattaa gcgc 324

<210> 33

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic VH Domain peptide of Hum I

<400> 33

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
   1                                  5                                  10                                  15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
           20                                  25                                  30  
 Tyr Ile His Trp Met Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
           35                                  40                                  45  
 Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val  
           50                                  55                                  60  
 Gln Gly Arg Phe Thr Met Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr  
           65                                  70                                  75                                  80

<220>  
<223> Description of Artificial Sequence: Synthetic VH nucleotide  
sequence of Hum I

```
<210> 35
<211> 108
<212> PRT
<213> Artificial Sequence
```

```

<400> 35
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
  1                               10                          15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
      20                      25                      30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
      35                      40                      45

Lys His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
      50                      55                      60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
      65                      70                      75                      80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
      85                      90                      95

```



<220>  
<223> Description of Artificial Sequence: Synthetic VL nucleotide  
sequence of Hum I

```
<210> 37
<211> 116
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Murine 1A6 VH Domain  
consensus sequence of Heavy Chain Subgroup III (Humiii)

```
<400> 37
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
  1             5          10           15
Ser Leu Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
      20            25           30
Tyr Ile His Trp Met Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
      35            40           45
Gly Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val
      50            55           60
Gln Gly Lys Ala Thr Met Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
      65            70           75           80
Leu Gln Leu Asn Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
      85            90           95
Thr Thr Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
      100           105          110
Thr Val Ser Ser
      115
```

<210> 38  
 <211> 108

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Murine 1A6 VL Domain  
 consensus sequence of Light Chain K Subgroup I (HumKI)

<400> 38  
 Asp Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Thr Pro Gly  
   1                  5                  10                  15  
 Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn  
                   20                  25                  30  
 Leu His Trp Tyr Gln Gln Lys His Ser Glu Ser Pro Arg Leu Leu Ile  
           35                  40                  45  
 Lys His Ala Ser Gln Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly  
       50                  55                  60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Thr  
   65                  70                  75                  80  
 Glu Asp Phe Gly Met Phe Phe Cys Gln Gln Ser Asn Ser Trp Pro Tyr  
                   85                  90                  95  
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
           100                  105

<210> 39  
 <211> 93  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Human VH Domain  
 consensus sequence of Heavy Chain Subgroup III (Humiii)

<400> 39  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
   1                  5                  10                  15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Phe Ser Trp Val  
           20                  25                  30  
 Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Ala Asp Ser Val  
       35                  40                  45  
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr  
       50                  55                  60  
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
   65                  70                  75                  80

<220>  
<223> Description of Artificial Sequence: Human VL Domain  
consensus sequence of Light Chain K Subgroup I (HumKI)

```
<210> 41
<211> 116
<212> PRT
<213> Artificial Sequence
```

```

<220>
<223> Description of Artificial Sequence: Murine 1A6 VH Domain
        consensus sequence of Heavy Chain Subgroup III (Humiii)

<400> 41
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1              5              10              15
Ser Leu Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
          20              25              30
Tyr Ile His Trp Met Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
          35              40              45
Gly Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Asp Pro Lys Val
          50              55              60
Gln Gly Lys Ala Thr Met Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
          65              70              75              80

```

[illegible]

```
<210> 42
<211> 108
<212> PRT
<213> Artificial Sequence
```

```

<220>
<223> Description of Artificial Sequence: Murine 1A6 VL Domain
        consensus sequence of Light Chain K Subgroup I (HumKI)

<400> 42
Asp Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Thr Pro Gly
 1             5             10             15
Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
          20             25             30
Leu His Trp Tyr Gln Gln Lys His Ser Glu Ser Pro Arg Leu Leu Ile
          35             40             45
Lys His Ala Ser Gln Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
          50             55             60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Thr
          65             70             75             80
Glu Asp Phe Gly Met Phe Phe Cys Gln Gln Ser Asn Ser Trp Pro Tyr
          85             90             95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
          100             105

```

```
<210> 43
<211> 116
<212> PRT
<213> Artificial Sequence
```

```

<220>
<223> Description of Artificial Sequence: Humanized 1A6
      (Hum19) VH Domain consensus sequence of Heavy Chain
      Subgroup III (Humiii)

<400> 43
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1             5             10             15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
                20             25             30

```

```

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
      35              40              45
Ala Arg Ile Asp Pro Ala Asn Asp Asn Thr Ile Tyr Ala Asp Ser Val
      50              55              60
Lys Gly Arg Phe Thr Ile Ser Ser Asp Asp Ser Lys Asn Thr Ala Tyr
      65              70              75
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
      85              90              95
Thr Ala Ser Gly Tyr Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
      100             105             110
Thr Val Ser Ser
      115

```

```

<210> 44
<211> 108
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Humanized 1A6
      (Hum19) VH Domain consensus sequence of Light Chain K
      Subgroup I (HumKI)

```

```

<400> 44
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
  1              5              10              15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Asn Asn
      20              25              30
Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
      35              40              45
Tyr His Ala Ser Gln Ser Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
      50              55              60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
      65              70              75              80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro Tyr
      85              90              95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
      100             105

```

```

<210> 45
<211> 93
<212> PRT
<213> Artificial Sequence

```

&lt;220&gt;

<223> Description of Artificial Sequence: Human VH Domain  
consensus sequence of Heavy Chain Subgroup III (Humiii)

&lt;400&gt; 45

```

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1              5              10              15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Phe Ser Trp Val
              20              25              30

Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Ala Asp Ser Val
              35              40              45

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 50              55              60

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 65              70              75              80

Thr Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
              85              90

```

&lt;210&gt; 46

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Human VL Domain  
consensus sequence of Light Chain K Subgroup I (HumKI)

&lt;400&gt; 46

```

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1              5              10              15

Asp Arg Val Thr Ile Thr Cys Trp Tyr Gln Gln Lys Pro Gly Lys Ala
 20              25              30

Pro Lys Leu Leu Ile Tyr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
 35              40              45

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
 50              55              60

Phe Ala Thr Tyr Tyr Cys Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 65              70              75              80

Arg

```

&lt;210&gt; 47

&lt;211&gt; 753

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic nucleotide sequence of Humanized scFv3 (Hum3)

<400> 47

```
cgaaccatgg gcgatatcca gatgacccaa tctccgtcta gcctgagcgc cagtgttggt 60
gatcgagtta ccattacttg ccgcgccagc caatctatca gtaataatct tctactgggtat 120
caacaaaaac cgggtaaagc tccgaaactt cttatcaaac acgcctctca gagcattagc 180
ggcgttccga gccgcttctc tggctctggc tcgggcacgg actttaccct taccatcagc 240
tctcttcagc cggaagactt tgccacctat tattgtcagc agtctaatag ctggcccgat 300
accttcggtc aaggtaccaa ggtcgagatt aagcgcggcg gtggcggttc tggtagcggt 360
ggtagcggtg gcggtggatc cggtagcggt ggcagcgaag ttcaacttgt tgagtctggt 420
ggcgggtctg ttcagccggg tggctctctg cgcctgtctt gcgcagcaag cggtttcaac 480
attaaggaca cctacatcca ttggatgagg caagctccgg gtaagggctc ggagtgggtg 540
gcacgtatcg acccgcaaaa cgacaacacc atttacgac cgaagggtgca gggccggttt 600
actatgtctg cggacacctc taagaacacc gcgtaccttc agatgaactc tctgcgtgcc 660
gaggacaccg ccgtctacta ctgcacgacc tctggctact ggtttgcta ctggggccag 720
ggcacgcttg tcaccgtctc ttctgggttaa ccc 753
```

<210> 48

<211> 61

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide AVL-1

<400> 48

```
cgaaccatgg gcgatatcca gatgacccaa tctccgtcta gcctgagcgc cagtgttggt 60
g 61
```

<210> 49

<211> 72

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide AVL-2

<400> 49

```
gtgaagatta ttactgatag attggctggc gcggcaagta atggtaactc gatcaccaac 60
actggcgctc ag 72
```

<210> 50

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide AVL-3

<400> 50  
 ctatcagtaa taatcttcac tggatatcaac aaaaaccggg taaagctccg aaacttctta 60  
 tctatcacgc c 71

<210> 51  
 <211> 68  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVL-4

<400> 51  
 cccgagccag agccagagaa gcggctcgga acgccgctaa tgctctgaga ggcgtgatag 60  
 ataagaag 68

<210> 52  
 <211> 70  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVL-5

<400> 52  
 ctctggctct ggctcgggca cggactttac ccttaccatc agctctcttc agccggaaga 60  
 ctttgccacc 70

<210> 53  
 <211> 66  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVL-6

<400> 53  
 ccttgaccga aggtatacgg ccagctatta gactgctgac aataataggt ggcaaagtct 60  
 tccggc 66

<210> 54  
 <211> 71  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVL-7

<400> 54  
 gtataccttc ggtcaaggta ccaaggctga gattaagcgc ggcggtggcg gttctggtgg 60



cggtggtagc g

71

<210> 55

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
AVL-8

<400> 55

cgaaccatgg gcgatatcca gatgacccaa tc

32

<210> 56

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
AVL-9

<400> 56

cggatccacc gccaccgcta ccaccgccac cag

33

<210> 57

<211> 73

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
AVH-1

<400> 57

ggtggcggtg gatccggtgg cggtggcagc gaagttcaac ttgttgagtc tggtagcggt 60  
ctggttcagc cgg 73

<210> 58

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
AVH-2

<400> 58

gtccttaatg ttgaaaccgc ttgctgcgca agacaggcgc agagagccac ccggctgaac 60  
cagaccgcca c 71

<210> 59  
 <211> 67  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVH-3

<400> 59  
 ggtttcaaca ttaaggacac ctacatccat tgggtgaggc aagctccggg taagggtctg 60  
 gagtggg 67

<210> 60  
 <211> 76  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVH-4

<400> 60  
 ggcccttcac gctgtcagcg taaatgggtgt tgtcgtttgc cgggtcgata cgtgccaccc 60  
 actccagacc cttacc 76

<210> 61  
 <211> 81  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVH-5

<400> 61  
 cgctgacagc gtgaagggcc gttttactat ttctagcgac gactctaaga acaccgcgta 60  
 ccttcagatg aactctctgc g 81

<210> 62  
 <211> 67  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
 AVH-6

<400> 62  
 ccagtagcca gagtccgtgc agtagtagac ggcgggtgtcc tcggcacgca gagagtcat 60  
 ctgaagg 67

<210> 63  
 <211> 65

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
AVH-7

<400> 63

ggactctggc tactggtttg cctactgggg ccagggcacg cttgtcacg tctcttctgg 60  
ttaac 65

<210> 64

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
AVH-8

<400> 64

ggtggcggtg gatccggt 18

<210> 65

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
AVH-9

<400> 65

gggttaacca gaagagacgg 20

<210> 66

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
BVH-6

<400> 66

ccagtagcca gaggccgtgc agtagtagac ggcggtgtcc tcggcacgca gagagttcat 60  
ctgaagg 67

<210> 67

<211> 65

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
BVH-7

<400> 67

ggcctctggc tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttctgg 60  
ttaac 65

<210> 68

<211> 81

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
CVH-5

<400> 68

cgctgacagc gtgaagggcc gttttactat ttctggcgac gactctaaga acaccgcgta 60  
ccttcagatg aactctctgc g 81

<210> 69

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
CVH-6

<400> 69

ccagtagcca gaggtcgtgc agtagtagac ggcggtgtcc tcggcacgca gagagttcat 60  
ctgaagg 67

<210> 70

<211> 65

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
CVH-7

<400> 70

gacctctggc tactggtttg cctactgggg ccagggcacg cttgtcaccg tctcttctgg 60  
ttaac 65

<210> 71

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
DVH-6

<400> 71

ccagtagcca gaggtcgtgc agtagtagac ggcggtgtcc tcggcacgca gagagttcat 60  
ctgaagg 67

<210> 72

<211> 65

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
DVH-7

<400> 72

gacctctggc tactggtttg cctactgggg ccagggcacg cttgtcacg tctcttctgg 60  
ttaac 65

<210> 73

<211> 76

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
EVH-4

<400> 73

ggccctgcac cttcggatcg taaatggtgt tgtcgtttgc cgggtcgata cgtgccaccc 60  
actccagacc cttacc 76

<210> 74

<211> 81

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
EVH-5

<400> 74

cgatccgaag gtgcagggcc gttttactat ttctgcggac gactctaaga acaccgcgta 60  
ccttcagatg aactctctgc g 81

<210> 75

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
GVL-3

<400> 79

ctatcagtaa taatcttcac tggatatcaac aaaaaccggg taaagctccg aaacttctta 60  
tcaaacacgc c 71

<210> 80

<211> 68

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
GVL-4

<400> 80

cccagagccag agccagagaa gcggctcggg acgccgctaa tgctctgaga ggcgtgaaag 60  
ataagaag 68

<210> 81

<211> 81

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
GVH-5

<400> 81

cgctgacagc gtgaagggcc gttttactat ttctgcggac gactctaaga acaccgcgta 60  
ccttcagatg aactctctgc g 81

<210> 82

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
GVH-6

<400> 82

ccagtagcca gaggtcgtgc agtagtagac ggcggtgtcc tcggcacgca gagagttcat 60  
ctgaagg 67

<210> 83

<211> 65

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
GVH-7

<400> 83

gacctctggc tactgggttg cctactgggg ccagggcacg cttgtcaccg tctcttctgg 60  
ttaac 65

<210> 84

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
HVL-3

<400> 84

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tcaaacacgc c 71

<210> 85

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<212> DNA

<213> Artificial Sequence

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<210> 86

<211> 76

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<211> 81

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<210> 89

<211> 65

<212> DNA

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<223> Description of Artificial Sequence: Synthetic oligonucleotide  
HVV-7

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<210> 90

<211> 71

<212> DNA

<213> Artificial Sequence

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IVL-3

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<213> Artificial Sequence



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<210> 94

<211> 67

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic oligonucleotide  
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ctgaagg 67

<210> 95

<211> 65

<212> DNA

<213> Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic oligonucleotide  
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&lt;400&gt; 95

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&lt;210&gt; 96

&lt;211&gt; 20

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&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic Linker  
peptide

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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
1 5 10 15Gly Gly Gly Ser  
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